

WE CLAIM:

1. A method of generating an image comprising a position identifying pattern and a content feature, the method comprising the steps of:  
generating the pattern and the content feature as a plurality of  
5 graphical pattern elements and a plurality of graphical content elements respectively, and  
superimposing the content feature and the pattern,  
wherein the content elements are smaller than the pattern elements in at least one dimension.  
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2. A method according to claim 1 wherein the content elements are spaced apart from each other in said one dimension.
3. A method according to claim 1 wherein the pattern and the content  
15 are each formed by the application of a marking material to a product.
4. A method according to claim 3 wherein the marking material is the same for the pattern and the content.
- 20 5. A method according to claim 2 wherein the pattern and the content are each formed by the application of a marking material to a product.
6. A method according to claim 5 wherein the marking material is the same for the pattern and the content.  
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7. A method according to claim 3 wherein the pattern and the content are applied to the product in a one-pass process.

8. A method according to claim 4 wherein the pattern and the content are applied to the product in a one-pass process.

5 9. A method according to claim 5 wherein the pattern and the content are applied to the product in a one-pass process.

10. A method according to claim 6 wherein the pattern and the content are applied to the product in a one-pass process.

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11. A method according to claim 1 wherein the step of generating the content feature comprises the steps of:

defining the content feature, determining whether the content feature is to be superimposed on the pattern and, if it is, converting the content  
15 feature so that it comprises said content elements.

12. A method according to claim 11 comprising, before the converting step, determining whether the content feature already comprises said content elements and, only if it does not, performing the converting step.

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13. A method according to claim 2 wherein the step of generating the content feature comprises the steps of:

defining the content feature, determining whether the content feature is to be superimposed on the pattern and, if it is, converting the content  
25 feature so that it comprises said content elements.

14. A method according to claim 13 comprising, before the converting step, determining whether the content feature already comprises said content elements and, only if it does not, performing the converting step.

5 15. A method according to claim 4 wherein the step of generating the content feature comprises the steps of:

defining the content feature, determining whether the content feature is to be superimposed on the pattern and, if it is, converting the content feature so that it comprises said content elements.

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16. A method according to claim 15 comprising, before the converting step, determining whether the content feature already comprises said content elements and, only if it does not, performing the converting step.

15 17. A method according to claim 6 wherein the step of generating the content feature comprises the steps of:

defining the content feature, determining whether the content feature is to be superimposed on the pattern and, if it is, converting the content feature so that it comprises said content elements.

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18. A method according to claim 17 comprising, before the converting step, determining whether the content feature already comprises said content elements and, only if it does not, performing the converting step.

25 19. A method according to claim 7 wherein the step of generating the content feature comprises the steps of:

defining the content feature, determining whether the content feature is to be superimposed on the pattern and, if it is, converting the content feature so that it comprises said content elements.

- 5    20.    A method according to claim 19 comprising, before the converting step, determining whether the content feature already comprises said content elements and, only if it does not, performing the converting step.

21.    A method according to claim 8 wherein the step of generating the  
10    content feature comprises the steps of:

defining the content feature, determining whether the content feature is to be superimposed on the pattern and, if it is, converting the content feature so that it comprises said content elements.

- 15    22.    A method according to claim 21 comprising, before the converting step, determining whether the content feature already comprises said content elements and, only if it does not, performing the converting step.

23.    A method according to claim 9 wherein the step of generating the  
20    content feature comprises the steps of:

defining the content feature, determining whether the content feature is to be superimposed on the pattern and, if it is, converting the content feature so that it comprises said content elements.

- 25    24.    A method according to claim 23 comprising, before the converting step, determining whether the content feature already comprises said content elements and, only if it does not, performing the converting step.

25. A method according to claim 10 wherein the step of generating the content feature comprises the steps of:

5 defining the content feature, determining whether the content feature is to be superimposed on the pattern and, if it is, converting the content feature so that it comprises said content elements.

26. A method according to claim 25 comprising, before the converting step, determining whether the content feature already comprises said  
10 content elements and, only if it does not, performing the converting step.

27. A method according to claim 1 wherein the content elements are smaller than the pattern elements in two dimensions.

15 28. A method according to claim 1 wherein the content elements are each smaller in area than each of the pattern elements.

29. A method according to claim 1 wherein the pattern elements are each formed from a plurality of pixels merged together to form a substantially  
20 solid element.

30. A method according to claim 29 wherein each of the content elements is formed as a single one of said pixels.

25 31. A method according to claim 1 wherein the density of the content elements within an area of the image is greater than the density of the pattern elements within said area.

32. A method according to claim 1 wherein the elements making up the content feature are arranged in a regular array.

5 33. A method according to claim 32 wherein the elements in the array are equally spaced.

34. A method according to claim 3 wherein the pattern and the content are applied to the product by a printer.

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35. A system for generating an image comprising a position identifying pattern and a content feature, the system being arranged to generate the content feature and the pattern, such that they are each made up of graphical elements and are superimposed on each other, and such that the  
15 elements of the content are smaller in at least one dimension than the elements of the pattern.

36. A system according to claim 35 comprising a marking device arranged to generate the image by applying marking material to a product.

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37. A system according to claim 36 wherein the marking device is a printer.

38. A system according to claim 36 wherein the marking device is  
25 arranged to apply the pattern elements and the content elements using a marking material which is the same for the pattern elements and the content elements.

39. A system according to claim 36 wherein the marking device is arranged to apply the elements to the product by applying marking material to the product in a plurality of dots to produce the pattern marks and the  
5 content marks.

40. A system according to claim 39 wherein the marking device is arranged to form each of the pattern elements from a plurality of said dots.

10 41. A system according to claim 39 wherein the marking device is arranged to form each of the content elements from at least one of said dots.

42. A system according to claim 39 wherein the marking device is  
15 arranged to form each of the content elements from a single one of said dots.

43. A system according to claim 36 wherein the marking device is arranged to apply the pattern elements and the content elements to the  
20 product in a one-pass process.

44. A system for applying a position identifying pattern to a product, the system comprising:  
marking means arranged to apply pattern marks to the product to make up a  
25 position identifying pattern and content marks to the product to make up a content feature, and  
control means arranged to control the marking means so as to superimpose

the content and the pattern on each other within at least an area of the product, said area having two dimensions, and within said area to make the content marks smaller than the pattern marks in at least one of the dimensions.

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45. A product having a position identifying pattern and a content feature applied to it, wherein:

the pattern comprises a plurality of discrete pattern marks,

the content feature comprises a plurality of content marks,

10 the content and the pattern are superimposed on each other within at least an area of the product, said area having two dimensions, and within said area the content marks are smaller than the pattern marks in at least one of the dimensions.

15 46. A method of analysing a position identifying pattern on a product, the product having on it the position identifying pattern comprising a plurality of pattern elements, and a content feature comprising a plurality of content elements, the content elements being smaller than the pattern elements, the method comprising the steps of:

20 forming an image of an area of the pattern and the content, and processing the image to extract the pattern from the content on the basis of the relative sizes of the pattern elements and the content elements.

47. A method according to claim 46 wherein the pattern is extracted  
25 from the content using Fourier transforms.

48. A system for identifying a position identifying pattern on a product, the product having thereon the position identifying pattern comprising a plurality of pattern elements and a content feature comprising a plurality of content elements, the content elements being smaller than the pattern elements in at least one dimension, the system comprising:  
5 a sensor arranged to form an image of an area of superimposed pattern and content, and  
a processor arranged to process the image to extract the pattern from the content on the basis of the relative sizes of the pattern elements and the  
10 content elements.

49. A system according to claim 48 wherein the processor is arranged to extract the pattern from the content using Fourier transforms.

15 50. A data carrier carrying data arranged to control a computer system to operate as a system according to claim 48.

51. A data carrier carrying data arranged to control an imaging system to operate as a system according to claim 44.

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52. A data carrier carrying data arranged to control a computer system to perform a method according to claim 1.

53. A data carrier carrying data arranged to control an imaging system to  
25 perform the method according to claim 46.